Velvet Vengeance

2009 - 2010 Manual

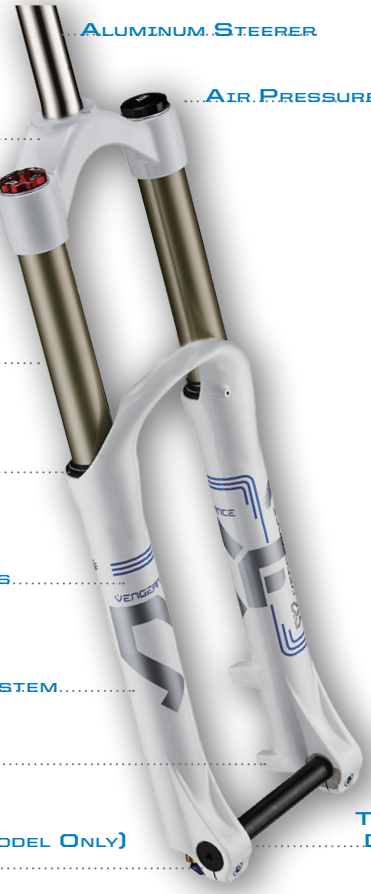
FUSION

PERFORMANCE SUSPENSION

Velvet R explained 3
Vengeance explained 4
Welcome to X-Fusion 5
Important Safety Information 5
Suspension Terminology 7
Installation 8
Initial Setup (Quickstart) 8
Air Pressure Settings Table 9
Setting Sag 11
Setting Rebound 12
Setting High & Low Speed Compression . 13
Maintenance 14
Service 15
Service Intervals Table 15
Warranty Information 16
Warranty Q & A 17
Disclaimer 17

Aluminum Steerer
Rebound Knob
Forged Aluminum Crown
Air Pressure Adjust
32mm Aluminum Upper Tubes
Main Seals
Magnesium Lowers
Low-Pressure Air Spring System
International Standard Disc Brake Mount
9mm Quick Release Dropouts
VELVET
FUSION
PERFORMANCE SUSPENSION

Vengeance



Aluminum Steerer

Air Pressure Adjust

Forged Aluminum Crown

Rebound Knob

36mm Aluminum
Upper Tubes

Main Seals

Magnesium Lowers

Low-Pressure Air Spring System

Post Mount
Disc Brake Mount

High & Low Speed
Compression Adjust (HLR Model Only)
With Protective Cap

20mm
Thru-Axle
Dropouts

FUSION
PERFORMANCE SUSPENSION

In your possession is the culmination of hard work, dedication and a promise to provide you with a world class suspension fork.

As a manufacturer of high-end mountain bike products, X-FUSION'S reputation for quality and performance is built upon thorough testing to ensure its function and durability. We can't guarantee trips to the podium, but we guarantee to provide you with duable fork that will perform at the highest level.

Please read this manual thoroughly as it contains important information about the proper installation, use, care and maintenance of your fork. It'll save you time and frustration and help deliver the type of fun and performance that you expect.

Important safety information

Before riding, please read **INITIAL SETUP (QUICKSTART), on page 8** for proper setup and use of your new X-FUSION fork. If you are unsure of the proper use or function of your fork, please call your nearest X-FUSION Service Center for further information.

Should your fork show signs of air and/or oil leakage, or make any unusual noises during use, please stop using the product immediately and return it to your dealer or authorized X-FUSION Service Center for inspection. Riding with an incorrectly installed, malfunctioning or damaged fork can be dangerous and can cause damage to the product and/or serious rider injury.

Also, please keep in mind the following important safety points:

- Verify that the brakes are installed and adjusted properly before riding your bicycle.
- If your fork tops or bottoms out excessively or makes unusual noises, immediately stop riding and contact an X-FUSION Service Center for inspection.
- Use only X-FUSION replacement parts. Using aftermarket parts on X-FUSION products will void its warranty.
- If mounting the bicycle in a carrier designed to hold a fork by its dropouts, use caution not to tilt the bicycle to either side. Tilting the bike with the dropouts in the carrier can cause structural damage to the fork. Ensure that the fork is fastened

securely with the quick-release and that the rear wheel is properly held. If the bicycle ever tilts or falls from a bicycle carrier, do not ride it until it is examined by an X-FUSION Service Center. A fork leg or dropout failure can cause loss of control and serious or fatal injuries.

» X-FUSION forks do not include reflectors for on-road use. Proper reflectors meeting the Consumer Product Safety Commission's (CPSC) requirements should be installed if the fork will be used on public roads.

» Do not attempt to modify the components of an X-FUSION fork. Altering the components can seriously sacrifice the reliability and strength of the fork, which can lead to serious injury or fatal injuries.

» Adhere to the maintenance interval specified in **MAINTENANCE, on page 14**. It will lengthen the life of your fork and help reduce down-time and repair costs.

» Your VELVET R contains cartridges filled with high pressure. Make sure all air chambers are empty before attempting to service the fork. Better yet, have all service and performed by an X-FUSION Service Center or your trusty local bike shop.

X-FUSION recommends the following to ensure your safety and make you a popular figurehead on the trails:

» Keep your bicycle and suspension in supreme working condition.

» Wear protective clothing, eye protection and helmet every time you ride.

» Know and ride within your limits.

» Follow IMBA's Rules of the Trail. For more information, go to **www.imba.com**:

1. Ride on open trails only
2. Leave no trace.
3. Control your bicycle.
4. Always yield trail.
5. Never scare animals.
6. Plan ahead.

Suspension Terminology

SAG The amount by which the shock compresses with the rider seated in the normal riding position. The recommended amount of sag is generally 20-30% of the total shock travel. The more sag, the plusher the ride. However, too much sag can lead to excessive bottoming-out.

DAMPING The action of the fork oil that is pushed through the valves to slow and control the compression or rebound of the fork.

COMPRESSION DAMPING Control how fast and how much the fork compresses by dialing in the compression damping. For increased tuning options, some of our forks have two separate compression damping adjustments: High speed and low speed.

LOW SPEED COMPRESSION DAMPING controls brake dive and rider induced bobbing. The term low speed refers to the speed of the fork compression, not the speed of the bicycle. Low speed compression damping can easily be felt when standing over the bike and pushing down on the fork.

HIGH SPEED COMPRESSION DAMPING affects how fast the fork compresses when hitting square-edged bumps. These bumps are large enough to force the suspension to go through most or all of it's travel very quickly. High speed adjustments can only be made after riding rough sections of trail. This is a fine tune adjustment.

REBOUND DAMPING controls the rate at which the fork returns to its original extended position. Generally, the fork should rebound slow enough to provide a smooth and controlled ride but not so slow as to pack down before the next set of bumps.

A SPRING is anything that returns energy. In suspension products springs are made of coiled steel or titanium wire, elastomers, or air.

SPRING RATE Defined as the amount of force required to compress the spring a given amount. Generally it is referred to in pounds per inch (lbs./in.).

Installation & Set-Up

It is extremely important that your fork is installed correctly by a qualified bicycle mechanic. Improperly installed forks are extremely dangerous and can result in severe and/or fatal injuries. Please support your local bike shop and have them properly install your fork. If you must do it yourself:

1. Remove the existing fork from the bicycle and the crown race from the fork.
2. Measure the length of the fork steerer tube against the length of the steerer tube. The steerer tube may need cutting to the proper length. Make sure there is sufficient length to clamp the stem.
3. Install the headset crown race firmly against the top of the VELVET R crown.
4. Install the VELVET R assembly on the bike. Adjust the headset until no play or drag is felt.
5. Install disc brakes according to the manufacturer's instructions.
6. When changing tires, always make sure there is at least 5 mm between the tire and the bottom of the VELVET R brace with the air in the VELVET R completely discharged and the VELVET R completely compressed.

Initial Setup (quickstart)

1) Adjust air pressure according to the charts below

2) Turn the Rebound knob all the way clockwise (in) and then back it out 6 to 8 clicks.

3) For Vengeance HLR & RC- Turn the blue Low Speed compression all the way out.

4) For Vengeance HLR - Turn the gold High Speed in 4 clicks.

For more precise tuning, set sag and damping according to the pages following Quick Set Up.

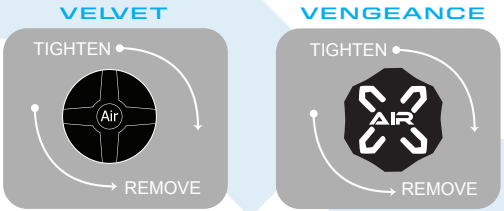
Air Pressure Settings

AIR PRESSURE SETTINGS TABLE VELVET	
RIDER WEIGHT IN LBS. (KG)	PRESSURE SETTING IN PSI (BAR)
< 155 lbs. (< 70)	70 (4.83)
155 - 170 (70 - 77)	75 (5.17)
170 - 185 (77 - 84)	80 (5.52)
185 - 200 (84 - 91)	85 (5.86)
200 - 215 (91 - 97)	90 (6.21)
215 - 230 (97 - 104)	95 (6.55)
230 - 245 (104 - 111)	100 (6.89)
245 - 260 (111 - 118)	105 (7.24)
260 > (118 >)	110 (7.58)
For every 15 lbs. (7 kg)...	...add 5 psi (0.34 bar) up to a maximum of 300 psi (20.68 bar)

AIR PRESSURE SETTINGS TABLE VENGENANCE HLR & RC	
RIDER WEIGHT IN LBS. (KG)	PRESSURE SETTING IN PSI
< 130 lbs. (<59)	35-40
130 - 145 (59 - 66)	40-45
145 - 160 (66 - 73)	45-50
160 - 175 (73 - 80)	50-57
175 - 190 (80 - 86)	57-65
190 - 210 (86 - 95)	65-75
> 210 (>95)	75-85

Air Pressure Settings

To add or remove air from the air chamber:



1. Remove the aircap from the top of the left leg.
2. Attach an X-FUSION High Pressure Pump the Schrader Valve on the aircap.
3. Pump the air chamber to the desired setting. If you need to bleed air from the air chamber, use the bleed button on the pump.
4. Remove the pump, and screw the aircap back on.

THE AIR YOU MIGHT HEAR LEAKING WHEN REMOVING THE PUMP CHUCK FROM THE SCHRADER VALVE IS AIR BEING PURGED FROM THE PUMP'S HOSE, NOT THE FORK'S AIR CHAMBER.

Setting Sag

Sag is the compression of the VELVET R caused by the rider's weight. A proper sag setting is crucial for the performance of your VELVET R. If sag is not properly set, your VELVET R is not able to follow the contours of the trail properly, giving you an unsatisfying ride.

Using the **AIR PRESSURE SETTINGS TABLE on page 9**, you can more accurately dial in the correct amount of pressure your VELVET R needs for maximum performance commensurate with your body weight.

To set sag:

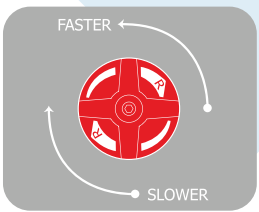
1. If your VELVET R is travel adjustable, set it to maximum travel.
2. Throw on your normal riding gear and carefully mount your bike. Wait about 10 seconds to allow the suspension to settle.

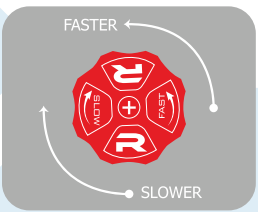
> IT IS RECOMMENDED TO HAVE A PARTNER HOLD THE BIKE UP WHILE YOU SIT ON THE BIKE. TRY TO MOUNT AND DISMOUNT THE BIKE AS SMOOTHLY AS POSSIBLE SO AS TO NOT MOVE THE ZIP TIE AND GIVE AN INCORRECT SAG MEASUREMENT.

3. Carefully dismount the bike, and measure the distance between the dust wiper and the zip tie. This is sag. The sag should be about 25% of maximum travel. So, for a 130mm issue fork, the distance between the zip tie and dust wiper should be about 32mm.
4. If you have more than 25% of sag, you might want to ADD air to the air chamber;if you have less than 25% of sag, you might want to REMOVE air from the air chamber.

Setting Rebound

Rebound damping controls the speed at which a fork returns after being compressed. Located at the top of the right leg is the rebound knob. Turning the knob clockwise (OUT) decreases rebound damping, causing the fork to return to full extension faster. Turning the knob counterclockwise (IN) increases rebound damping, slowing the return of the fork to full extension.

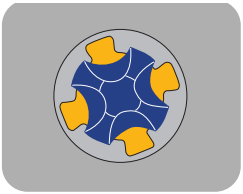




The rebound setting can be set to your personal preferences within functional limits. If your rebound is too slow, your fork will tend to "pack up," as it cannot extend fast enough before hitting the next bump. When your forks rebound is set too fast, it will respond too quickly to impacts and not absorb the impacts properly and could result in your body being loaded with the recoil of the impact.

Go out and ride around a bit. Since you know your baseline setting, experiment going 2 clicks out (or in). If you don't like the new setting, come back in (or out) 1 click. This procedure is called "bracketing," and will help you find the ride that's right. You might even change your rebound depending on the type of conditions you're riding in. Stutter bumps, for example, might necessitate that your fork quickly prepares for the next hit; therefore, you might want a faster rebound.

Setting High & Low Speed Compression

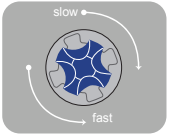


High and Low Speed Compression knobs are located on the lower right of your fork. Remove protective cap to adjust the compression damping. The High and Low speed compression controls the velocity of oil going through the valves which alters the force needed to move the travel of the fork.

Both High and Low speed compression damping knobs work the same way. Turn the knob Clockwise to get FIRMER compression, turn the knob Counter-Clockwise to get SOFTER compression.

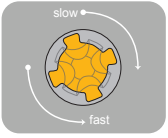
LOW SPEED COMPRESSION

Low speed compression damping determines how the fork reacts to smaller bumps, pedal bob or brake dive This is the main tuning option for compression damping.



HIGH SPEED COMPRESSION

High speed compression damping can be adjusted to fine tune the fork. High speed hits are sharp-edge obstacles that cause the fork to compress extremely quickly. Too much high speed damping causes the forks to feel harsh in the roughest of terrain. Too little and the fork could bottom out excessively. (note that high speed is referring to shock movement velocity.) The goal is to find the right dial to suit your courses. **When turning the High Speed gold knob, it will turn the Low Speed blue knob with it. This does not affect the low-speed setting.**



Maintenance

X-FUSION products are high performance products. The hydraulic dampers are not designed to be serviceable by the end user. The fork was designed and engineered from the start to require very little maintance, yet maintain high performance.

Always keep your fork clean. Use warm water, mild soap and a soft scrub brush to clean your fork.

NEVER USE A HIGH-POWERED PRESSURE WASHER TO CLEAN YOUR FORK.

To maintain a valid warranty for your fork, it is necessary that the buyer executes the periodic maintenance and cleaning according to the following time lines:

BEFORE EACH RIDE: Clean the fork exterior and inspect for unusual wear and tear.

EVERY 3-4 RIDES: Lubricate main seals.

AT 200 HOURS OR 12 MONTHS FROM ORIGINAL PURCHASE DATE: Send your fork to an Authorized Service Center for general inspection of the replacement parts. To keep your VELVET R performing at its best we strongly recommend using only X-FUSION Authorized Service Centers.

Additionally, be sure to follow the service intervals as outlined in **SERVICE, below**.

To maintain valid the general warranty conditions, it is also necessary for all products to be set up and used in accordance with the X-FUSION owner's manual and the bicycle manufacturer's user manual.

IF THE FORK IS OE (ORIGINAL EQUIPMEN) ON A PURCHASED BICYCLE AND THERE IS A USAGE AND/OR INSTALLATION CONFLICT, DEFER TO THE BIKE MANUFACTURER'S INSTRUCTIONS.

X-FUSION has Authorized Service Centers located in various countries around the world. Please consult the list of our Service Centers located on the back cover of this manual or, for the most up to date list, please visit us at **www.x-fusion-shox.com**.

SERVICE INTERVALS TABLE

PROCEDURE	FREQUENCY
Wipe down externals	Every ride
Oil Change	Every 200 hours or 18 months
Replace dust wipers	Every 200 hours or 18 months
Replace air seals	Every 200 hours or 18 months
Replace piston O-ring	Every 200 hours or 18 months

Warranty Information

The warranty period for all X-FUSION forks is 24 months starting from the original date of purchase and is valid for all countries of the European Community. A copy of the original purchase receipt must accompany each fork that is sent for repair under these warranty terms.

The acceptance of a warranty claim during the 24 month warranty period is up to the discretion of X-FUSION or any Authorized Service Center acting on its behalf. X-FUSION or its agents will determine if the failure is due to workmanship or product abuse. The warranty will be void if the buyer does not inform the seller of the damage after its discovery within 60 days.

X-FUSION applies only the terms of warranty mentioned in this contract and in the legal bill and reserves the right to judge if the product is subject of the following terms:

X-FUSION and its agents reserve the right to all final warranty or non-warranty decisions.

General exclusions from this warranty shall include but are not limited to any failures caused by:

- Installation of parts or accessories that are not qualitatively equivalent to genuine X-FUSION parts.
- Abnormal strain, neglect, abuse and/or misuse.
- Accident or collision damage.
- Modification of original parts.
- Lack of proper maintenance. (See the MAINTENANCE section.)
- Any attempt to disassemble damper assembly.
- Shipping damages or loss (purchase of full value insurance is recommended).
- Damage to interior or exterior caused by improper cable routing, seatpost, rocks, crashes or improper installation.
- Oil changes or service not performed by X-FUSION or an Authorized Service Center.

Specific exclusions from this warranty include:

» Parts replaced due to normal wear and tear and/or routine maintenance.

» Parts subject to normal wear and tear and/or routine maintenance, such as bushings and reducers, seals, and suspension fluids.

X-FUSION makes no other warranty of any kind, expressed or implied. All implied warranties of merchantability and fitness for a particular purpose which exceed the obligations and time limits stated in this warranty are hereby disclaimed by X-FUSION and excluded from this warranty.

Warranty Q & A

Q. What costs are my responsibility during the warranty period?

A. The customer is responsible for all costs of maintenance services, non-warranty repairs, accident and collision damages, oil, seals, bushings and reducers, and mounting hardware.

Q. What are some examples of "abnormal" strain, neglect or abuse?

A. These terms are general and overlap each other in areas. Specific examples are: Hucking, ghost riding, big drop, stunt/daredevil riding, riding with broken parts, riding without oil in fork, too much preload, wrong spring rate, etc.

Q. Does the warranty cover incidental costs, such as shipping or transportation?

A. No. The warranty is limited to repair of materials and/or workmanship.

disclaimer

X-FUSION is not responsible for any damages to you or others arising from riding, transporting, or other use of your fork or bicycle. In the event that your VELVET R breaks or malfunctions, X-FUSION shall have no liability or obligation beyond repair or replacement of your VELVET R, pursuant to the terms outlined in **WARRANTY INFORMATION, on page 16**.

INTERNATIONAL SERVICE CENTERS

United States X-Fusion Service Center
475 W. Sunnyoaks Avenue
Campbell, CA 95008 USA
Phone: 408-866-0188
Fax: 408-866-0100
Toll free: 866-319-SHOX (7469)
info@x-fusion-shox.com

Australia DIY MTB
20 Bay Street Callala Bay NSW 2540
Australia
Phone +61 2 4446 4636
Fax +61 2 4446 4731
Mobile +61 429 923 962
info@diymtb.com.au

Brazil SCITEX IMP. COM. E SERV. LTDA.
Rua Paracatu, 616 – CEP04302-021 –
Pq. Imperial – São Paulo – Brasil
Phone: (55-11) 5587-3662
www.scitex.com.br

Czech Rebublic Schindler spol. s.r.o.
Slezska 101/112 747 27 koberice,
Czech Republic
Tel: +606 426 855
Fax:+553 657 809
info@x-fusion.cz
www.x-fusion.cz

Canada Renegade Cycle Solutions
6044 Camass Place
Duncan, British Columbia
Canada, V9L 3Y9
Info@r-c-s.ca
phone 250 483 6677
Fax 250 483 5272
www.r-c-s.ca

China ADURA BIKE
No.7, Xiangyang 2nd gsrden, feihu
Rd,Ludu town, Taicang city,
Jiangsu, China
Tel: +86-512-5666-8333
www.adurabikes.com
hill_xtvtk@163.com

France Exhauss Racing
17 rve Jean de la Fontaine 22590
PORDIC, France
Phone: +33(0) 2965 82791
Fax: +33(0) 2965 82791
contact@exhaussracing.com
www.exhaussracing.com

Germany KOEHN
Goettinger Chaussee 12-14
D 30453 Hannover
Germany
Phone: +49 (0) 511 473204 40
Fax: +49 (0) 511 473204 49
info@x-fusion-shox.de
www.x-fusion-shox.de

Israel Ran O Fun
Shavil Zion,Mail Box 92,
Israel
Phone: +972545600212
Fax: +97249522334
ran@ranofun.co.il
www.ranofun.co.il

Italy Bike Suspension Center
Via Monte Leone 4, I-39010 Cermes,
Italy
Phone: 0473 563 107
Fax: 0473 559 630
info@pepi.it
www.bikesuspension.com

Korea Anasazi Sports Korea, Ltd
3th FL. 26-16, JUUI-2DONG
SWANG,JIN-GU, SEOUL, KOREA
Phone: (02) 456-8230/8231
Fax: (02) 456-3064
anasazikorea@hotmail.com

Philippines Peregrine Marketing
E.O. PEREZ ST. SUBANGDAKU,
NORTH RECLAMATION,
MANDAUE CITY, CEBU,
PHILIPPINES
Phone:+032-233-0352
FAX:+032-412-8153
sales@peregrinebike.com
www.peregrinebike.com

Poland Bikershop
ul.Puszkarska 7 30-644 Kraków,
Poland
TEL: +48 668 664 327
FAX:+48 12 255 99 40

Portugal Cosmojump Apartudo 29,
Zona industrial de Loureiro
3720-070 Loureiro oliveira
deazemeis
Phone: +351256690900
cosmo.b4@gmail.com

Singapore Bike Labz
Blk 3012 #03-2018 bedok ind park e
Singapore 489778
24marketing@gmail.com
www.bikelabz.com

Spain FunSport Express
LLULL 47-49, 08005 BARCELONA
Spain
Phone: 34-93 486 3424
Fax: 34-93 486 9278
info@funsportexpress.com
www.funsportexpress.com

Switzerland Rider's Elements
Lyssachstrasse 108
3400 Burgdorf
Schweiz/Switerland
info@riders-elements.ch
Phone: 41 (34) 422 47 11
Fax: 41 (34) 422 47 12
info@riders-elements.ch
www.riders-elements.ch

Taiwan Iron Stable
No. 260, Kuang-Cheng Lane,
Nei-Tung Road, Houli Shiang,
Taichung County, Taiwan.
Phone: 886-4-25575422
Fax: 886-4-25567528
contact@ironstable.com.tw
www.ironstable.com.tw

FUSION
PERFORMANCE SUSPENSION

www.XFUSIONSHOCKS.com